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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/905,676	07/13/2001	Nicholas Jon Ede	660097.408	4816

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EXAMINER

TRAN, MY CHAU T

ART UNIT PAPER NUMBER

1639

DATE MAILED: 12/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/905,676

Applicant(s)

EDE ET AL.

Examiner

My-Chau T. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 October 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 30-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,6,11,12,18,21 and 25-29 is/are rejected.
- 7) ☒ Claim(s) 24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5 & 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of Group I (Claims 1-29) in Paper No. 8 is acknowledged.
2. Claims 30-33 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 8.
3. Claims 2-5, 7-10, 13-17, 19-20, and 22-23 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 8.
4. The generic claims (Claims 1, 6, 21, and 24-29) and the elected species, chelating metal, (Claims 11-12 and 18) are treated on the merit in this Office Action.

### *Claim Rejections - 35 USC § 102*

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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6. Claims 1, 6, and 11-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Goldberg et al. (US Patent 5,804,263).

Goldberg et al. disclosed a grafted polymeric surface (col. 5, lines 50-54). The process of gamma beam radiation induced polymerization surface modification is used to produce the grafted polymeric surface (col. 5, lines 7-10). The surface includes metallic surfaces such as nickel (col. 10, lines 3-6). The grafted polymeric surface of Goldberg et al. anticipates the presently claimed invention.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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9. Claims 1, 6, 11-12, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over M<sup>c</sup> Pherson et al. (US Patent 6,013,855) in view of Goldberg et al. (US Patent 5,804,263).

M<sup>c</sup> Pherson et al. disclosed a grafted polymeric surface (col. 4, lines 9-44). The process of gamma beam radiation induced polymerization surface modification is used to produce the grafted polymeric surface (col. 4, lines 24-27). The surface includes metals and glasses (col. 5, lines 51-55). The grafted polymer includes polyacrylic acid (col. 6, lines 52-56). The grafted polymer surface is biocompatible in which enzymes can be immobilized (col. 4, lines 22-23).

The grafted polymeric surface of M<sup>c</sup> Pherson et al. does not expressly disclose that the metal surface is nickel.

Goldberg et al. disclosed a grafted polymeric surface (col. 5, lines 50-54). The process of gamma beam radiation induced polymerization surface modification is used to produce the grafted polymeric surface (col. 5, lines 7-10). The surface includes metallic surfaces such as nickel (col. 10, lines 3-6). The grafted polymeric surface of Goldberg et al. anticipates the presently claimed invention.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include a nickel metal surface as taught by Goldberg et al. in the grafted polymeric surface of M<sup>c</sup> Pherson et al. One of ordinary skill in the art would have been motivated to include a nickel metal surface in the grafted polymeric surface of M<sup>c</sup> Pherson et al. for the advantage of providing a surface that resistance to corrosion due to its high stability of the oxide layers on the surface (M<sup>c</sup> Pherson: col. 5, lines 28-30). Since both M<sup>c</sup> Pherson et al. and Goldberg et al. disclose a grafted polymeric surface produce from gamma beam radiation

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induced polymerization surface modification (M<sup>c</sup> Pherson: col. 4, lines 24-27; Goldberg: col. 5, lines 7-10).

10. Claims 1, and 25-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over M<sup>c</sup> Pherson et al. (US Patent 6,013,855) in view of Lukhtanov et al. (US Patent 6,339,147).

M<sup>c</sup> Pherson et al. disclosed a grafted polymeric surface (col. 4, lines 9-44). The process of gamma beam radiation induced polymerization surface modification is used to produce the grafted polymeric surface (col. 4, lines 24-27). The surface includes metals and glasses (col. 5, lines 51-55). The grafted polymer includes polyacrylic acid (col. 6, lines 52-56). The grafted polymer surface is biocompatible in which enzymes can be immobilized (col. 4, lines 22-23).

The grafted polymeric surface of M<sup>c</sup> Pherson et al. does not expressly disclose that the grafted polymeric surface bind to an amine compound by Schiff base formation.

Lukhtanov et al. disclosed the Schiff base type covalent linkage that covalently link oligonucleotide to a solid support (col. 3, lines 38-41). The advantage of the Schiff base type covalent linkage is its stability and high coupling densities on the surface of the solid support (col. 4, lines 21-37).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the binding of the grafted polymeric surface to an amine compound by Schiff base formation as taught by Lukhtanov et al. in the grafted polymeric surface of M<sup>c</sup> Pherson et al. One of ordinary skill in the art would have been motivated to include the binding of the grafted polymeric surface to an amine compound by Schiff base formation in the grafted polymeric surface of M<sup>c</sup> Pherson et al. for the advantage of providing a

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stable linkage and high coupling densities on the surface of the solid support. Since both M<sup>c</sup> Pherson et al. and Lukhtanov et al. disclose immobilizing a biomolecule onto a solid support (M<sup>c</sup> Pherson: col. 4, lines 22-23; Lukhtanov: col. 3, lines 38-41).

11. Claim 24 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Allowable Subject Matter***

12. The following is a statement of reasons for the indication of allowable subject matter:

Claim 24 is allowable because the activated modular grafted polymeric surface comprising of a benzaldehyde polystyrene lantern and a benzaldehyde polystyrene lantern coupled to streptavidin or horseradish peroxidase are free of the prior art.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to My-Chau T. Tran whose telephone number is 703-305-6999. The examiner is on ***Increased Flex Schedule*** and can normally be reached on Monday: 8:00-2:30; Tuesday-Thursday: 7:30-5:00; Friday: 8:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew J. Wang can be reached on 703-306-3217. The fax phone numbers for the

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organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9307 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1123.

mct

December 23, 2002

  
PADMASHRI PONNALURI  
PRIMARY EXAMINER